A NEW *HILARA* MEIGEN (DIPTERA: EMPIDIDAE) SPECIES FROM THE EASTERN MEDITERRANEAN REGION OF TURKEY[1]

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ABSTRACT: *Hilara bolkarensis* sp. n. is described from the eastern Mediterranean region of Turkey (Bolkar Mountains). Male and female are described, compared with related species and male genitalia as well as fore leg illustrated. A key to the species related to *H. bolkarensis* sp. n. is provided.

KEY WORDS: new species, *Hilara*, Empididae, Diptera, Turkey

Hilara Meigen is a complex genus of the family Empididae (Diptera). There are 215 species from the Palaearctic Region in the recent Palaearctic Catalogue (Chvála and Wagner, 1989), but since then many new *Hilara* species have been described and some of them synonymized (Chvála, 1997, 1999, 2000, 2005b, Pârvu, 1991, 1992, 1994). Distinctions between species of *Hilara* are scarce and hard to perceive, making species recognition difficult, often leading to misunderstandings and misidentifications (Chvála 1997, 2000, 2005a). Until Collin's (1961) revisionary work, many authors studied *Hilara* in a far-from-ideal fashion. Straka (1975) and Engel (1941) incorrectly identified some species causing many problems for subsequent authors. Owing to the studies and systematic revisions made by Chvála in the last few decades, confusions within the Palaearctic species of *Hilara* have been largely removed.

The Empididae is a poorly known family of flies in Turkey, with just a few records made and new species described by Loew, Collin (see Chvála and Wagner 1989), Chvála (1994), and more recently by Barták (2006) and Barták et al (2007). Up to now, there has been no study on *Hilara* from Turkey. High numbers of *Hilara* species are likely to be found in Turkey because of its zoogeographical position, variable altitudes, and habitats favor the evolution of numerous species.

METHODS

This study is based mainly on 31 males and 23 females, specimens collected from the Bolkar Mountains in 2005. For examination, male genitalia and legs were dissected and cleared in the 10% KOH for 24 hours at 30°C. All figures were drawn using a binocular microscope with an ocular grid. Before drawing the thickened fore basitarsus, the leg was first macerated to illustrate the true shape. After the drawing, all dissected parts were stored in small plastic capsules

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with glycerol and pinned along with the specimens. Sinclair and Cumming (2006) terminology was followed, with a few modifications.

SYSTEMATIC ENTOMOLOGY

Hilara bolkarensis sp. n.

Figs. 1-8

Etymology: The species is named after the Bolkar Mountains where the materials were collected.

Diagnosis: Completely black, body length about 3.7-4.5 mm, subshining, grey and brown pruinose species with black halter. Acrostichals biserial, dorsocentral bristles uniserial. Wings black clouded with black costal stigma and veins dark brown. Legs black, fore basitarsus longer than tibia, very swollen and dorsally with 2-4 serial black, rather long and thick bristles. Abdomen blackish brown with brownish grey pruinose. Terminalia moderately large, slightly brown pruinosity.

Description of the male: Head black, in posterior view with brown pruinosity. Occiput black with black bristles as long as postpedicel. A pair of ocellar and frontal bristles long, black and subequal in length. Eyes separated on frons, frons black and middle part slightly grey pruinosity. Face grey pruinosity with lower edge shining black. Antenna black, style half as long as postpedicel. Palpus black, stout and long, ventrally with black hairs and 2 long and black preapical bristles. Proboscis short, slightly curved forward.

Thorax black. Scutum subshining, brown pruinosity with 2 slightly visible stripes between lines of acrostichal and dorsocentral bristles, stripes end at prescutellar depression. Lateral margins of scutum subshining black. Pleura grey pruinosity. Prothoracic collar with single strong black bristle on each side. Acrostichals and dorsocentral bristles black and hair-like. Acrostichals biserial, dorsocentral bristles uniserial ending with 2 rather long prescutellar pairs. Strong thoracic bristles black; 1 humeral, 1 posthumeral, 3 notopleurals, 1 supra-alar, 1 postalar and 2 pairs of scutellar bristles. Front half of notopleural depression with black bristle-like hairs as long as acrostichals and postpronotum with numerous short black hairs.

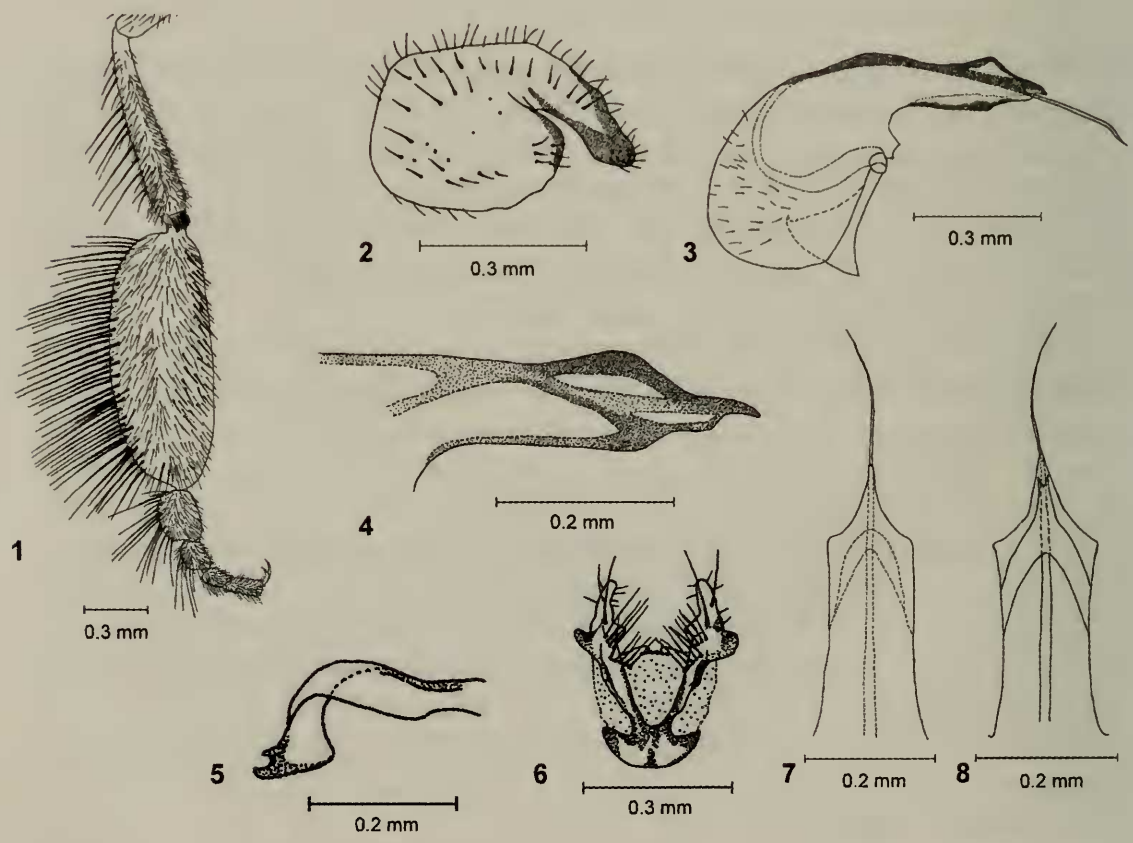
Wings black clouded with black costal stigma. Veins dark brown. Costal bristle long and black, as long as postpedicel. Squamae black with pale fringes, halter black with lighter stem.

Legs short, completely black and slightly grey pruinosity. All femora with short black hairs, only hairs on hind femur a little longer. Mid femur on basal half with 3 black anterior bristles longer than width of mid femur. Fore tibia thick-

ened apically, posterodorsally with row of long black bristles, ventrally with 1 apical bristle. Mid tibia on apical half anteroventrally with 2-3 black hairs as long as width of mid tibia. Hind tibia on apical half anteroventrally and dorsally with 3 black hairs as long as width of hind tibia. All tarsal segments with ventrally short, slightly stout black and dorsally longer but fine, yellow and black hairs. Fore basitarsus (Fig. 1) longer than fore tibia, very swollen and dorsally with 2-4 serial black, rather long and thick bristles. Second and third tarsomeres on fore legs also swollen and dorsally with long bristles.

Abdomen blackish brown with brownish grey pruinosity. Abdominal hairs black, only on anterior 4 segments with yellow and black hairs. Hind marginal abdominal bristles short fine and not very distinct. Posterior margin of anterior 3 tergites with greyish white stripe more visible in lateral view. Terminalia moderately large, slightly brown pruinosity, epandrial lamella (Fig. 2) and tip of hypandrium (Fig. 4) subshining. Apical projection of epandrial lamella a little long, postgonite (Fig. 5) forked at tip.

Holotype male, body length: 3.9 mm, wing length: 4.7 mm.



Figures 1-8. *Hilara bolkarensis* sp. n.: 1- fore leg, 2- epandrial lamella, lateral view, 3- hypandrium and phallus, 4- tip of hypandrium in lateral view, 5- postgonite, 6- cerci, 7- tip of hypandrium in dorsal view, 8- tip of hypandrium in ventral view.

Description of the female: All bristles and hairs fine. Fore basitarsus simple not swollen, lacking long bristles. Bristles and hairs on legs short and hind tibia swollen towards tip and middle part slightly curved. Body length 4.0-4.5mm, wing length 4.7-5.0mm.

Differential Diagnosis: On the basis of the long black bristled male fore tibia and tarsi, *Hilara bolkarensis* sp. n. needs to be compared with related species, *H. clavipes*, *H. macedonica* and *H. curtisi*. *Hilara clavipes* has yellowish brown legs, scutum with grey pruinosity but in *H. bolkarensis* sp. n. all legs are black with slightly grey pruinose and scutum with brown pruinosity. *Hilara bolkarensis* sp. n. clearly differs from *H. clavipes* according to the shape of the epandrium. In *H. macedonica* the antennal stylus is as long as the postpedicel, the scutum has light grey pruinosity with 2 darker silky stripes, whereas in *H. bolkarensis* sp. n. the antennal stylus is half the length of the postpedicel, the scutum is subshining, with brown pruinosity and 2 slightly visible stripes. *Hilara bolkarensis* sp. n. much more resembles *H. curtisi* than the latter two species. *Hilara curtisi* possess black legs but the front coxae and base of femora are slightly yellowish, also front trochanters and all knees narrowly yellowish, scutum slightly grey pruinose, whereas in *H. bolkarensis* sp. n. the legs are completely black and scutum with brown pruinosity. The main differences of *H. bolkarensis* sp. n. from the other species are the shape of the fore basitarsus and number of dorsal bristles on the fore basitarsus. The fore basitarsus of *H. clavipes* is not longer than the fore tibia, dorsally with one row of bristles and also second and third tarsomeres with dorsal bristles. The fore basitarsus of *H. macedonica* is also not longer than the fore tibia, with dorsally 4-5 bristles in 2 rows and also the second tarsomere dorsally with 1-2 bristles. The fore basitarsus of *H. curtisi* is very similar to *H. clavipes* but the second tarsomere is slightly longer and third tarsomere bare. The fore basitarsus of *H. bolkarensis* sp. n. is longer than the fore tibia, with 2-4 serial long bristles and the second and third tarsomeres with more dorsal bristles.

Specimens Examined: Holotype male (spn15131): Turkey, Karaman, Ayrancı, Küçük Koraç village, 1852m, 15.06.2005, leg M. Çiftçi and A. Hasbenli; Allotype (spn15132) and 30 male and 22 female paratypes (spn15133-15184) are from same locality and date. Holotype, allotype and 28 male and 20 female paratypes are deposited in the Zoological Museum of Gazi University (ZMGU), 2 male and 2 female paratypes (spn15181-15184) are deposited in Antipa Museum.

Key *Hilara bolkarensis* sp. n. and related species

This key is arranged according to the key of *Hilara* made by Engel (1941).

1. Occiput black 2
- Occiput clearly grey pruinosity 3

2. Occiput black in dorsal view. Scutum slightly grey pruinosity with two bright stripes between the acrostichal and dorsocentral bristles. Fore basitarsus on male almost as long as fore tibia and dorsally with long black bristles in one row. Third tarsomere on fore leg bare. Halter completely brown .... *H. curtisi* Collin
- Occiput black. Scutum subshining, brown pruinose with two slightly visible stripes between the lines of acrostichal and dorsocentral bristles, stripes end at prescutellar depression. Male fore basitarsus longer than fore tibia and dorsally with long black bristles in two to four rows. Third tarsomere on fore leg dorsally with bristles. Halter black with lighter stem..... *H. bolkarensis* sp. n.

3. Mid tibia only with long pubescence and ventrally with some bristly hairs. Dorsal bristles of male fore basitarsus at most two times more strongly than biserial dorsal bristles on fore tibia. Biserial acrostichals longer than the diameter of the postpedicel. Light grey species with two darker silky stripes at scutum. Abdomen with grey pruinosity. Male length 4.5-5mm .... *H. macedonica* Engel
- Mid tibia on apical half with dorsal bristles two times longer than the diameter of mid tibia; also mid basitarsus with long bristles. Male fore basitarsus three times broader than fore tibia, fore tibia apically with long bristles, basally with short bristles. Scutum brownish grey pruinose with two shining black stripes between rows of bristles. Abdomen on tergites with brownish, on sternites with grey pruinose. 4-5mm ..... *H. clavipes* Harris

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